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Title of thesis:

Effects of *Hypericum perforatum* on ketamine-induced changes in mature male rats testicular tissue and epididymal sperms characteristics

*Recreational ketamine (KET) abuse is extremely increasing worldwide due to its hallucinatory effects in human. From this point of view, the present survey was designed to elucidate the effects of *Hypericum perforatum* (HP) on KET-induced changes in mature male rats testicular tissue and epididymal sperms characteristics. Twenty adult male rats were assigned into four equal groups including non-treated control group, HP control group receiving HP (Kneipp® Johanniskraut Dragees H; 100 mg/kg/day) orally (PO) for 14 days, KET group receiving KET (20 mg/kg/day; intra-peritoneally (IP)) for 14 days, and KET/HP group receiving KET (20 mg/kg/day; IP) plus HP (100 mg/kg/day; PO) for 14 days. After that, testicular histo-architecture, histopathological changes and anti-oxidant/oxidant balance as well as epididymal sperms characteristics were examined at the end of experimental period. The HP administration caused significant promotion in testicular histological indices and total anti-oxidant capacity and epididymal sperms characteristics (count, motility and viability) along with significant decline in testicular tissue damage and total oxidant status compared to KET group. These findings emphasize on protective function of HP against KET-instigated reproductive disorders in mature male rats, opening the novel way for future therapeutic approaches in the field of drug abuse adverse effects.*

Keywords: *Hypericum perforatum*; Ketamine; Rat; Schizophrenia; Sperm; Testis